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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/805,483	03/13/2001	Dennis W. Goupil	BioCure 190	3748
27029	7590	07/21/2004	EXAMINER	
BIOCURE, INC. 2975 GATEWAY DRIVE SUITE 100 NORCROSS, GA 30071			CHANNAVAJALA, LAKSHMI SARADA	
			ART UNIT	PAPER NUMBER
			1615	

DATE MAILED: 07/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/805,483

Applicant(s)

GOUPIL ET AL.

Examiner

Lakshmi S Channavajjala

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5-13,39-50,58,60 and 61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5-13 and 39-50 is/are rejected.
- 7) ☒ Claim(s) 58,60 and 61 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicants requested cancellation of claims 51-57, and 59 and stated that claims 1, 5-13, 39-50 and 58 are pending in the instant application. Claims 51-57 and 59 have been canceled. However, instant prosecution history reveals that claims 60 and 61 are also pending. Accordingly, claims 1, 5-13, 39-50, 58, 60 and 61 are considered for prosecution.

Response to Amendment

2. Upon careful reconsideration, the finality of the rejection of the last Office action has been withdrawn and the following is a new rejection applied to instant claims.

Claim Objections

3. Claims 58, 60 and 61 are objected to because they are dependent from a canceled claim. Accordingly, the above claims have not been considered for further examination.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,863,972 ('972).

'972 discloses crosslinked polyvinyl alcohol (PVA) particles, wherein the PVA is crosslinked with agents such as glutaraldehyde, glyoxal etc., that are capable of forming cross-linked portions with 2 or more carbon atoms between vinyl alcohol molecules (abstract, col. 3,

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lines 32-47). Instant specification describes that the pendant chains are attached via acetal linkages to the 1,2 or 1,3-hydroxyl groups and that the cross linking carried out by any chemical or other means (instant page 5). Thus, the glutaraldehyde crosslinked PVA of '972 meet the claimed requirement of pendant groups. '972 disclose the particle size of PVA in the range of 63 to 105 microns (example 2). Further, the biodegradable nature is inherent to PVA particles of '972. Therefore, '972 anticipate instant claims.

5. Claims 1, 5, and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Thanoo (J. Pharm. Pharmacol. 1993).

Thanoo discloses crosslinked polyvinyl alcohol (PVA) microspheres, wherein the PVA is crosslinked with agents such as glutaraldehyde (abstract, page 1 and results and discussion). Instant specification describes that the pendant chains are attached via acetal linkages to the 1,2 or 1,3-hydroxyl groups and that the cross linking carried out by any chemical or other means (instant page 5). Thus, the glutaraldehyde crosslinked PVA of Thanoo meet the claimed requirement of pendant groups. Further, the biodegradable nature is inherent to PVA particles of Thanoo. Fig. 5 of Thanoo shows the release of aspirin upto 24 hours. Therefore, Thanoo anticipates instant claims.

6. Claims 1, 5, 8, 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Thanoo (J. Applied Biomaterials. 1991).

Thanoo discloses crosslinked polyvinyl alcohol (PVA) microspheres, wherein the PVA is crosslinked with agents such as glutaraldehyde (abstract, page 1 and results and discussion).

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Instant specification describes that the pendant chains are attached via acetal linkages to the 1,2 or 1,3-hydroxyl groups and that the cross linking carried out by any chemical or other means (instant page 5). Thus, the glutaraldehyde crosslinked PVA of Thanoo meet the claimed requirement of pendant groups. Further, Thanoo teaches the OPVA microspheres for incorporating radioopaque material such as barium sulfate and furthermore the biodegradable nature is inherent to PVA particles of Thanoo. Therefore, Thanoo anticipates instant claims.

7. Claims 39-41, 44, 46 and 48-50 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,508,317 to Muller.

Muller discloses crosslinked polymers of PVA, which contain cyclic acetal or ketal groups and the cross linkable polymers such as the polymers having 1,2-diol or 1,3-diol structure (col. 1). The crosslinkable PVA macromer of Muller has the same structure as that of instant claim 41 (col. 2). Further, Muller teaches cross-linking be carried by photocrosslinking or free radical initiated (col. 12). Muller teaches the use of the polymers in the making of contact lenses, eye bandages, membranes for diffusion control etc (col. 9) and teaches the preparation of article by molding (col. 8). Accordingly, Muller anticipates instant claims.

Claim Rejections - 35 USC § 103

8. Claims 6, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thanoo (J. Pharm. Pharmacol. or J. Applied Biomaterials) in view of in view of US 6,265,509 to Muller (Muller).

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Thanoo (both references) teach crosslinked PVA but fails to teach the specific formula of the macromer of instant claims.

Muller teaches crosslinked polymers of PVA, which contain cyclic acetal or ketal groups and the cross linkable polymers such as the polymers having 1,2-diol or 1,3-diol structure (col. 1). The crosslinkable PVA macromer of Muller has the same structure as that of instant claim 6 (col. 2). Further, Muller teaches cross-linking be carried by photocrosslinking or free radical initiated (col. 12). Muller teaches the use of the polymers in the making of contact lenses, eye bandages, membranes for diffusion control etc ((col. 2-5 and col. 14, lines 50-64).

Accordingly, it would have been obvious for one of an ordinary skill in the art at the time of the instant invention to employ the PVA polymers having crosslinkable groups such as that described by Muller in preparing crosslinked PVA polymer microspheres of Thanoo because Muller teaches that their crosslinkable PVA polymer is stable, inexpensive and can be subjected substantial purification.

9. Claims 42, 43, 45 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,508,317 to Muller in view of Thanoo (J. Applied Biomaterials).

Muller fails to teach incorporating active agents or contrast agents in the contact lenses or other articles of Muller made of crosslinkable PVA.

Thanoo, discussed above, teaches microspheres crosslinked PVA for delivering contrast agents, which also meet the requirement of an active agent. Accordingly, it would have been


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obvious for one of an ordinary skill in the art at the time of the instant invention to use the PVA polymers of Muller for incorporating contrast agents or radioopaque agents such as barium sulphate and use them the polymers as radioopaque hydrogels for application such as vascular embolization because Thanoo teaches PVA has many characteristics that makes it suitable for embolization.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lakshmi S Channavajjala whose telephone number is 571-272-0591. The examiner can normally be reached on 7.30 AM -4.00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman K Page can be reached on 571-272-0602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Lakshmi S Channavajjala
Examiner
Art Unit 1615
July 14, 2004


Lakshmi S. Channavajjala, PhD
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